REMARKS

This amendment is in response to the Official Action dated January 24, 2007. Claims 1, 3-13, and 15-22 are currently pending in connection with the present application. Claims 1, 10, 13, and 19 are independent claims. In this amendment, claims 2 and 14 have been canceled without prejudice or disclaimer to further prosecution of their underlying subject matter, and claims 1, 3-13, and 15-22 have been amended. Reconsideration and allowance is requested in consideration of the claim amendments and the following remarks.

No new matter has been added by this Amendment. Particularly, with regard to the amended claim language reciting "*said level adjustment circuit changes a level of a direct current voltage supplied to in said circuit, proportionally to a luminance of said light emitting element,*" Applicant submits that support for this feature comes directly from former claims 2 and 14. Claim 19 has been amended to recite language similar to claim 10. Claims 3 and 4 have been amended to depend on claim 1. Claim 15 has been amended to depend on claim 13. Finally, all the claims have been amended to remove the reference numerals. None of these amendments warrant new grounds for rejection, as they do not claim new subject matter.

Applicant thanks the Examiner for the acknowledgement of priority under 35 USC § 119. Applicant further thanks the Examiner for the careful consideration of all of the references listed in the Information Disclosure Statements filed June 25, 2004 and April 18, 2005. Finally, Applicant acknowledges that the drawings have been accepted.

35 USC §102 Rejections

Claims 1, 3-7, 9, 13, 15, 16, and 18 have been rejected under 35 U.S.C. § 102(b) as being unpatentable over Yamazaki et al. (U.S. Patent No. 6,424,326, hereinafter "**Yamazaki**"). Applicant respectfully traverses this rejection. (Applicant notes that the Examiner actually rejected claims "13-6." However, applicant assumes the Examiner intended to reject claims 13-16.)

Yamazaki discloses an LCD display device said to be capable of maintaining clarity despite the deterioration of light emitting elements within the LCD. Fig. 7 illustrates the Yamazaki device,

including display portion 301, source signal line driver 302, gate signal line driver 303, and a sensor portion 306. Fig. 9 illustrates how the luminance of the EL in the display device is adjusted in accordance with the sensor output signal from sensor portion 306. In Fig. 9, signal generator 406 provides an analog display signal to video signal correction circuit 401. Video signal correction circuit 401 initially converts the analog display signal into a digital display signal (col. 16, ll. 25-29, not shown in figure), which is input into arithmetic unit 403. Arithmetic unit 403 modifies the digital display signal to compensate for the deterioration of the EL elements, based on the digital sensor output signal, as modified by A/D converter 402. After arithmetic unit 403 modifies the digital video signal, D/A converter 405 converts the modified digital signal into an analog signal, which is output to the source signal line driver 302.

With respect to claim 1, Applicant submits that Yamazaki does not teach or suggest, "*said level adjustment circuit changes a level of a direct current voltage supplied to said circuit, proportionally to a luminance of said light emitting element.*" Instead, Yamazaki adjusts an input signal using a digital operation, without employing various levels *of a direct current voltage*. While Yamazaki indicates that the digital video signal must already have the necessary electric potential in order to obtain ideal luminance levels, Yamazaki does not teach or suggest that this potential is produced or imparted by arithmetic unit 403, an element of the video signal correction unit 401, or D/A converter 405, nor does Yamazaki teach that imparting the necessary electric potential involves a changing level of direct current voltage. On the contrary, Yamazaki makes it particularly clear that arithmetic unit 402 performs a strictly digital operation on the input signal, because signal correction circuit 401 converts the analog video signal to a digital signal prior to input into the arithmetic unit (col. 16, ll. 25-29). Therefore, Yamazaki does not teach performing level adjustment using "*a direct current voltage...proportionally to a luminance of said light emitting element.*"

With respect to claim 3, Applicant submits that Yamazaki does not teach or suggest "*a D/A converter for performing digital-analog conversion on said RGB signal; and wherein said level adjustment circuit changes a reference voltage to be supplied to said D/A converter based on said information of respective RGB colors obtained by said adjustment information retrieve means.*"

Instead, Yamazaki teaches an arithmetic unit 403 that modifies a digital signal, which is thereafter converted to an analog signal. Yamazaki does not teach or suggest a D/A converter **having both** a digital signal and a reference voltage as input, where the reference voltage is set based on the RGB adjustment information.

Yamazaki therefore fails to disclose, teach, or suggest various features of independent claim 1 and dependent claim 3. For similar reasons, claim 13 is also neither disclosed nor suggested by Yamazaki (although claims 1, 3, and 13 should be interpreted solely based upon the limitations set forth therein).

Applicant further notes that the outstanding Office Action rejects claims 3-6 and 15 by citing generally to columns 13 – 17 of Yamazaki, without further explanation. Applicant respectfully notes that columns 13 – 17 make no reference whatsoever to the elements of claims 3-6 and 15. For example, Yamazaki does not refer to "*a reference voltage to be supplied to said D/A converter*" (claim 3), "*time-series pixel data*" (claim 4), or "*changing said direct current voltage ... in synchronization with a sample hold signal*" (claim 6), as well as other elements in the rejected claims. Although Applicant submits that Yamazaki does not disclose or suggest the features recited in these claims for at least the reasons noted above, Applicant respectfully requests the Examiner to clearly identify where such features are found, should the Examiner continue to rely upon the Yamazaki reference.

Accordingly, Applicant respectfully requests that the rejection of claims 1, 3, and 13, and dependent claims 4-7, 9, 15, 16, and 18, under 35 U.S.C. § 102(b) be withdrawn.

35 USC 103 Rejections

Claims 10-12 and 19-22 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki in view of Miyachi et al. (U.S. Patent No. 6, 982,686, hereinafter "**Miyachi**"). Applicant respectfully traverses this rejection.

The Examiner admits that Yamazaki does not teach "*a motion detection circuit for detecting motions by said image signal; a level adjustment circuit for changing a level of an RGB signal before divided to said drive signals for the respective RGB colors based on a result of the motion detection obtained from said motion detection circuit; and a duty ratio adjustment circuit for changing the duty ratio of a light emission time of said pixels based on the motion detection result,*" as recited in independent claim 10. The Examiner relies on Miyachi (cols. 38-44) for the teaching admittedly absent in Yamazaki.

Miyachi discloses a method and apparatus for managing the light intensity of cold-cathode tubes in LCD monitors. Particularly, the cited elements of Miyachi are directed to a system for managing the illumination produced by cold-cathode tubes based on the motion present in a video signal. In Fig. 42, a video signal is input to liquid crystal panel control circuit 804. Control circuit 804 produces three output signals, two output signals for controlling the liquid crystal panel 805, and one output signal for controlling inverter control circuit 801. Inverter control circuit 801 controls cold-cathode tube 803, via Inverter 802. No signal is passed to the liquid display panel 805 for controlling the cold-cathode tube. Instead, an external circuit, i.e. inverter circuit 801, dims the cold-cathode tube.

Applicant submits that Miyachi does not teach, suggest, or render obvious "*a level adjustment circuit for changing a level of an RGB signal before divided to said drive signals for the respective RGB colors based on a result of the motion detection obtained from said motion detection circuit; and a duty ratio adjustment circuit for changing the duty ratio of a light emission time of said pixels based on the motion detection result,*" as recited in independent claim 10. In particular, Miyachi does not solve the problems associated with motion on an LCD by modifying "*a level of an RGB signal,*" nor does Miyachi teach "*changing the duty ratio of a light emission time of said pixels*". Instead, Miyachi adjusts the luminance by directly dimming a cold-cathode tube. Miyachi therefore changes the light emission of the cold-cathode tube, whereas applicant is claiming "*changing the duty ratio of a light emission time of said pixels,*" as exemplified in Applicant's Figs. 8 and 9.

Even if Yamazaki and Miyachi were combinable (which applicant does not admit), the combination still fails to render independent claim 10 obvious. Instead, a combination of Yamazaki and Miyachi would produce a system capable of modifying a digital signal to compensate for backlight deterioration and capable of modulating the backlight to improve video and still image clarity. The combination fails to yield "*a level adjustment circuit for changing a level of an RGB signal... based on a result of the motion detection obtained from said motion detection circuit; and a duty ratio adjustment circuit for changing the duty ratio of a light emission time of said pixels based on the motion detection result.*"

Therefore, Applicant submits that none of the cited references of Yamazaki and Miyachi, either alone or in any proper combination, cure the deficiencies of Yamazaki with respect to at least the previously identified features of claim 10. For similar reasons, independent claim 19 is neither disclosed, suggested, nor rendered obvious by Yamazaki and Miyachi (although claims 10 and 19 should be interpreted solely based upon the limitations set forth therein).

Furthermore, Applicant notes that claims 11 and 20 are also neither taught nor rendered obvious by Yamazaki and Miyachi in light of similar reasons to those set forth regarding claim 1 (above).

Claims 8 and 17 have been rejected under 35 U.S.C. § 103 as being unpatentable over Yamazaki in view of Tanada (U.S. Patent No. 6, 774,578).

As previously described, Yamazaki does not disclose, teach, or suggest at least the feature of "*said level adjustment circuit changes a level of a direct current voltage supplied to in said circuit and proportional to luminance of said light emitting element*" recited in claims 1 and 13. Dependent claims 7 and 18 depend on independent claims 1 and 13, respectively, and therefore include the features of independent claim 1 and 13.

Tanada discloses a device for detecting and adjusting for EL degradation by detecting the variance in luminance on a pixel-by-pixel basis. However, Tanada does not disclose or suggest a

level adjustment circuit that changes a level of a direct current voltage supplied to said circuit that is proportional to the luminance of a light emitting element, all features that are also absent from Yamazaki, as described above.

Even assuming, arguendo, that Yamazaki and Tanada were combinable, Applicant submits that none of the cited references either alone or in any proper combination, cure the deficiencies of Yamazaki with respect to at least the previously identified features of claims 1 and 13.

Accordingly, Applicant respectfully requests that the rejection of independent claims 10 and 19, and dependent claims 11-13, 18, and 20-22 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-2839 from which the undersigned is authorized to draw.

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Respectfully submitted,

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